

A7 Cancelled

26. (Amended) The arrangement of claim 1 wherein the grooves have a greatest transverse dimension in the range of 0.3 - 2.5 mm.
27. (Amended) The arrangement of claim 24, wherein d1 is 4.5 mm or 9.0 mm.
- 28 (Amended) The arrangement of claim 7, wherein the thickness of the opal plate is 2 mm.

REMARKS

Claims 1-28 remain in the application.

In the Office Action, the Examiner objected to the Abstract because of a misspelling. A corrected new abstract is supplied herewith on a separate sheet.

The Examiner objected to the specification as lacking subtitles. The specification is amended to include appropriate subtitles.

The Examiner objected to claims 5-13 and 16-28 under 37 C.F.R. § 1.75(c) as being improper multiple dependent claims and objected to claims 1-4, 14 and 15 as having misspelled words. Each of the aforementioned claims is amended herein to obviate the grounds for the Examiner's objections.

The Examiner rejected claims 1-4, 14 and 15 under 35 U.S.C. § 112, second paragraph, citing many instances of alleged indefiniteness. Although the claim amendments herein obviate most of the instances of indefiniteness cited on pages 2-5 of the Office Action, Applicants respectfully traverse the rejection of claim 1 on grounds that the alternative recitals in lines 1 and 5 are impermissible. Section 2173.05(h) of the MPEP at subsection II expressly states that "made entirely or in part of" has been held to be acceptable. The expression "wholly or partly along the length of the plate" in claim

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1, in the context of alternative expressions, is no different and therefore also acceptable. As for the expression "illuminated sign or panel arrangement" in the preamble of claim 1, Applicants submit that the terms "sign" and "panel" are, in fact, equivalent elements in the context of the arrangement of the present invention.

Substantively, the Examiner rejected claims 1-4, 14, and 15 under 35 U.S.C. §102(b) as being anticipated by Matsumoto (U.S. Patent No. 5,386,347), and further rejected claim 1 under 35 U.S.C. §102(b) as being anticipated by Ishikawa et al. (U.S. Patent No. 5,600,455) and also by Kobayashi et al. (U.S. Patent No. 5,408,388). To the extent that these rejections are deemed applicable to the claims, as amended herein, the rejections are respectfully traversed.

In the rejection based on Matsumoto, the Examiner asserts that the light distribution plate (A) in the reference has "a plurality of grooves (9, Matsumoto discloses in column 7, lines 20-23 that the grooves can be in the form of lines). . ." (Office Action, lines 2-4 of the paragraph bridging pages 6 and 7). The diffusion plane (8) in the drawing figures of Matsumoto is formed by sandblasting, as explained in column 6, line 35, and has a plurality of irregular reflector regions (9) distributed thereon. Although the regions (9) are described as "ship-shape" patterns as shown in Figs. 2 and 13, "they may be in the form of triangles, groups of lines, or dots". However, there is no suggestion of grooves, particularly spaced apart grooves, in Matsumoto and, for that reason the rejection of claim 1 under 35 U.S.C. §102 should be withdrawn.

Since claims 2-28 depend ultimately upon claim 1 these claims also should be allowed.

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Also, Applicants note that neither Ishikawa et al. nor Kobayashi et al. disclose the "spaced apart grooves" of the present invention. Although in Kobayashi et al. discloses a light transmitting plate 2 having prismatic cuts 21 arranged close to one another, the "spaced apart grooves" of the present invention are not present in this reference or in Ishikawa et al. Therefore, the rejections of claim 1 under 35 U.S.C. §102(b) as being anticipated by either of Ishikawa et al. or Kobayashi et al. do not lie and should be withdrawn.

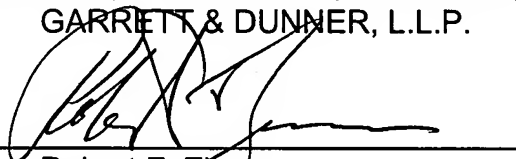
Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

If any extension of time under 37 C.F.R. § 1.136 is required for entry of this response, and not accounted for by an attached request and fee payment by check, please grant such extension and charge the required fee to our deposit account 06-0916.

Respectfully submitted,

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Appendix to Amendment
U.S. Application No. 10/089,568
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Amended Claims:

1. (Amended) An illuminated sign or panel arrangement[, e.g., for traffic information, advertising, other information, decoration etc., characterised by] comprising:

[-] at least one clear light distribution plate of transparent plastic[s] material[, e.g., acrylic,]or glass and having opposite side faces, [wherein] one of the [sides] side faces of the plate [is] being provided with a plurality of spaced apart, substantially parallel grooves[, and wherein the grooves extend] extending wholly or partly along the length of the plate between a first and a second end thereof;

[-] at least one elongate light source device extending transverse to the parallel grooves and located along at least one of the ends to deliver light directly into the plate; and

[-] at least one of (a) a light diffuser plate or display film positioned adjacent to the other side face of the light distribution plate, [and/or] and (b) a light reflector plate or sheet positioned adjacent to the [first] one side face of the light distribution plate.

2. (Amended) The [An] arrangement [as disclosed in] of claim 1, [characterised by

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- a] including first and [a] second light distribution plates, [wherein] the [grooved sides] side faces of the first and second plates [are] provided with grooves being placed adjacent to one another.

3. (Amended) The [An] arrangement [as disclosed in] of claim 2, [characterised in

- that] wherein a light reflector plate or sheet is placed between the [two] first and second light distribution plates.

4. (Amended) The [An] arrangement [as disclosed in] of claim 2 [or 3, characterised in

- that] wherein a light diffuser plate or display film is placed adjacent to the [non-grooved] other side face of at least one of the first and second light distribution plates.

5. (Amended) The [An] arrangement [as disclosed in] of [one or more of preceding 2-4, characterised in

- that] claim 2, wherein the first and second light distribution plates [on the grooved side thereof] have at least one light source device receiving recess on the side faces thereof provided with grooves and extending transverse to the grooves, so that when the [grooved sides] side faces of the plates provided with grooves rest against one another, opposite recesses will provide space for [the] a light source device.

6. (Amended) The [An] arrangement [as disclosed in] of claim 1, [one or more of claims 1-5, characterised in

- that] wherein the light diffuser plate covers wholly or partly the [non-grooved] other side face of the light distribution plate.

7. (Amended) The [An] arrangement [as disclosed in] of claim 1, [one or more of claims 1-6, characterised in

- that] wherein the light diffuser plate is covered by an opal plate.

8. (Amended) The [An] arrangement [as disclosed in] of claim 1, [one or more of the preceding claims, characterised in

- that] wherein the grooves have their termination a short distance from respective end edges of the light distribution plate[(s)].

9. (Amended) The [An] arrangement [as disclosed in] of claim 1, [claims 1-4 or 6-8, characterised in

- that] wherein one light source device is provided at one end edge of the light distribution plate[(s)].

10. (Amended) The [An] arrangement [as disclosed in] of claim 1 [claims 1-4 or 6-8, characterised in

- that] wherein a light source device is provided at a respective end edge of the two opposite end edges of the light distribution plate[(s)].

11. (Amended) The [An] arrangement [as disclosed in] of claim 1, [one or more of the preceding claims, characterised in

- that] wherein at least one of the width and[/or] depth of the grooves increases in the direction away from the light source device.

12. (Amended) The [An] arrangement [as disclosed in] of claim 1, [one or more of the preceding claims, wherein] including two light source devices [are used, characterised in

- that] and wherein at least one of the width and[/or] depth of the grooves, as seen from each of the light source devices, increases until about [the midway] a point midway between the light source devices.

13. (Amended) The [An] arrangement [as disclosed in] of claim 12, [characterised in

- that] wherein at least one of the width and[/or] depth of the grooves increases non-linearly.

14. (Amended) The [An] arrangement [as disclosed in] of claim 2, [characterised in

- that] wherein the grooves in the first light distribution plate are parallel with and immediately above the grooves in the second light distribution plate.

15. (Amended) The [An] arrangement [as disclosed in] of claim 2, [characterised in

- that] wherein the grooves in the first light distribution plate are parallel to, but laterally offset in relation to the grooves in the second light distribution plate.

16. (Amended) The [An] arrangement [as disclosed in] of claim 1, [anyone of the preceding claims, characterised in

- that] wherein the light source device is a cold cathode tube.

17. (Amended) The [An] arrangement [as disclosed in] of claim 1, [anyone of the preceding claims, characterised in

- that] wherein the light source device is a fluorescent tube.

18. (Amended) The [An] arrangement [as disclosed in] of claim 1,
[anyone of preceding claims 1-4 and 6-17, characterised in

- that] wherein the light source device [consists of] includes a plurality of
light-emitting diodes placed side by side and arranged to beam [in] substantially
[the same direction, i.e.,] in the same longitudinal direction of the grooves.

19. (Amended) The [An] arrangement [as disclosed in] of claim 18,
[characterised in

- that] wherein the heads of the light-emitting diodes are placed in a
recess in the end edge portion of the light distribution plate.

20. (Amended) The [An] arrangement [as disclosed in] of claim[s] 18,
[and 19, characterised in

- that] the number of light-emitting diodes corresponds approximately to
the number of grooves in the light distribution plate.

21. (Amended) The [An] arrangement [as disclosed in] of claim 1, [one
or more of claims 1-4 and 6-17, characterised in

- that] wherein the light source device consists of a single light source
which supplies plurality of optical fibres [which] having at their output ends,
[have] a beam direction substantially in the longitudinal direction of the grooves.

22. (Amended) The [An] arrangement [as disclosed in] of claim 21,
[characterised in

- that] wherein the output ends of the optical fibres rest against the end
edge of the light distribution plate.

23. (Amended) The [An] arrangement [as disclosed in] of claim 1,
[characterised in

- that] wherein the output ends of the optical fibres are placed in a recess
in the end edge portion of the light distribution plate.

24. (Amended) The [An] arrangement [as disclosed in] of claim 1, [one
or more of the preceding claims, characterised in

- that] wherein the distance between the grooves in the light distribution
plate is a function of the thickness of the plate, wherein $d1 = d2 + k * d3$, and
wherein d1 is the groove distance, d2 is a fixed minimum groove distance,
d3 is the thickness of the light distribution plate and k is a constant.

25. (Amended) The [An] arrangement [as disclosed in] of claim 24,
[characterised in

- that] wherein $k = 0.625$ and d2 is 1.5 mm.

26. (Amended) The [An] arrangement [as disclosed in] of claim 1 [one
or more of the preceding claims, characterised in

- that] wherein the grooves have a greatest transverse dimension in the
range of 0.3 - 2.5 mm[, preferably in the range 0.4 - 0.8 mm].

27. (Amended) The [An] arrangement [as disclosed in] of claim 24,
[characterised in

- that] wherein d1 is 4.5 mm or 9.0 mm.

28 (Amended) The [An] arrangement [as disclosed in] of claim 7, [one
or more of the preceding claims, characterised in

- that] wherein the thickness of the opal plate is 2 mm.

Abstract

An illuminated sign or panel arrangement for traffic information, advertising, decoration, and other information, for example, having at least one clear light distribution plate (19; 20) of transparent plastics material such as acrylic, or glass, wherein one of the sides of the plate is provided with a plurality of substantially parallel grooves (21; 22), and wherein the grooves extend wholly or partly along the length of the plate between a first and a second end thereof, At least one elongate light source device (38; 39) extends transverse to the parallel grooves, and a light diffuser plate (24; 25) or display film is positioned adjacent to the second side of the light distribution plate (19; 20) and/or a light reflector plate (23) or sheet positioned adjacent to the first side of the light distribution plate.

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